Claim Amendments:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-11 (Canceled).

12. (Original) A process for cooling and positioning at least one translating substrate during a continuous high-throughput coating deposition process comprising

providing a feed spool of substrate;

unspooling and threading the substrate through a vacuum deposition chamber;

loading into the vacuum deposition chamber coating material that is to be deposited onto a surface of the substrates;

reducing the pressure in the deposition chamber to no greater than about 10^{-5} Torr;

initializing an energy source located in the deposition chamber to a pre-determined power level and trajectory;

vaporizing the surface of the coating material utilizing energy from the energy source;

providing a substrate positioning means;

guiding the substrates through a deposition zone in the vacuum chamber by contacting the substrates with a curved surface of the substrate positioning means;

maintaining the temperature of the tape in the deposition zone at a preselected temperature by contacting the tape with a cooling and positioning means;

injecting at least one gas selected from the group consisting of inert gases and oxygen onto the substrate and into the deposition chamber through the orifices in the cooling and positioning means;

allowing the vaporized coating material to impinge upon a surface of the substrates in the deposition zone for a period of time sufficient to deposit a coating of eroded coating material onto the substrates; and

collecting the coated substrates on individual take-up spools.

Claims 13-15 (Canceled).

16. (Original) The process of claim 12 where the cooling and positioning means is a substrate positioning assembly containing internal liquid coolant channels and internal gaseous coolant delivery channels.

17. (Original) The process of claim 12 where the temperature at the surface of the substrate when in heat transfer relationship with the substrate positioning means is maintained at a temperature below 50°C.

18. (Original) The process of claim 12 where the cooling and positioning means contains internal gas delivery channels connected by a manifold to a gas source and which open to the deposition chamber through nozzles at multiple points where the substrate assembly contacts the translating substrate and gas is flowed through the nozzles as the substrate translates through the deposition zone.

Claims 19-25 (Canceled)

26. (New) A process for continuous deposition of a coating of an HTS tape, comprising:
loading a substrate into a deposition chamber;
translating the substrate through the deposition chamber along a substrate block, the substrate block having gas channels extending therethrough;
injecting gas through the gas channels of the substrate block and onto the substrate; and
depositing a coating material on the substrate as the substrate translates along the substrate block to thereby form the coating.

27. (New) The process of claim 26, wherein the coating is a buffer layer over which an HTS layer is formed, the buffer layer having a biaxial texture.

28. (New) The process of claim 27, wherein the buffer layer has an in-plane texture of not greater than 20 degrees.

29. (New) The process of claim 28, wherein the buffer layer has an in-plane texture of not greater than 15 degrees.

30. (New) The process of claim 29, wherein the buffer layer has an in-plane texture of not greater than 14 degrees.

31. (New) The process of claim 27, wherein the buffer layer has an average texture at least about 3 degrees less than a buffer layer formed under identical process conditions except injection of gas directly into the deposition chamber rather than through the substrate block.

32. (New) The process of claim 26, wherein the coating material is generated by vaporizing a material source in the deposition chamber, vaporization being carried out by energizing an energy source.

33. (New) The process of claim 32, wherein the energy source is selected from the group consisting of electron beam energy, ion beam energy, and magnetron energy.

34. (New) The process of claim 26, wherein the substrate is translated through the deposition chamber by a reel-to-reel system.

35. (New) The process of claim 26, wherein the substrate block has a coolant channel, the process further comprising passing a coolant through the coolant channel.

36. (New) The process of claim 26, wherein the substrate block and the substrate are in a heat transfer relationship, the substrate block being maintained at a temperature below 50°C.

37. (New) The process of claim 26, wherein the gas comprises at least one species from the group consisting of oxygen, nitrogen, argon, and helium.

38. (New) The process of claim 37, wherein the gas comprises oxygen.

39. (New) The process of claim 26, wherein the gas channels terminate at nozzles, and wherein the gas is flowed through the nozzles such that the gas flows onto a backside of the substrate.

40. (New) The process of claim 26, wherein the tape is translated through the deposition chamber at a speed within a range of about 0.4 to 300 meters/hour.

41. (New) The process of claim 26, wherein the coating material is selected from the group consisting of MgO and YSZ.

42. (New) The process of claim 26, wherein the substrate block has a curved contour along which the substrate translates.

43. (New) The process of claim 42, wherein the curved contour has a negative curvature.

44. (New) The process of claim 26, wherein the coating material is deposited with the assist of an ion beam.

45. (New) The process of claim 26, wherein the substrate block has multiple rows of gas channels.

46. (New) The process of claim 26, wherein the substrate comprises a nickel alloy.